In the Claims:

Please amend the claims as follows:

1. (currently amended) ~~1.~~ A method of controlling an industrial robot ~~(1),~~ comprising a control unit ~~(1a)~~ and a manipulator ~~(1b)~~ including a tool ~~(2)~~ with a tip ~~(18)~~ comprising a defined tool center point ~~TCP~~, for determining an actual position ~~(p1tu)~~ corresponding to ~~a~~ an inaccurate programmed position ~~(p1p)~~ for a spot ~~(22)~~ on a surface ~~(17)~~ of a work piece ~~(15)~~, ~~characterized in~~ the method comprising:

bringing the tip ~~(18)~~ of the tool ~~(2) is brought~~ to be moved from a first programmed position ~~(p1s)~~ at a distance from the surface ~~(17)~~ in a defined direction towards the work piece ~~(15)~~,

bringing the tip ~~(18) is brought~~ to collide with the surface ~~(17)~~ at a collision point ~~(p1c)~~, and

computing the actual position ~~(p1tu) is computed~~ from the distance between the collision ~~(p1c)~~ and the first programmed position ~~(p1s)~~ in the defined direction of movement.

2. (currently amended) ~~A~~ The method according to claim 1, further comprising:

moving ~~wherein~~ the tool ~~(2) is brought to be moved~~ towards a second position ~~(p1b)~~ programmed to be positioned behind the work piece seen in the direction of movement.

3. (currently amended) ~~A~~ The method according to claim 1 ~~or 2~~, ~~wherein~~ further comprising:

stopping the movement of the tip ~~(18) is brought to be stopped~~ when a created force ~~(F_a)~~ between the work piece ~~(15)~~ and the tip ~~(18)~~ has increased to a predefined value ~~(F_{pd});~~.

4. (currently amended) ~~A~~ The method according to claim 3, ~~wherein~~ further comprising:

detecting the created force ~~(F_a) is brought to be detected~~ by supervising motor torques of axes of the robot.

5. (currently amended) ~~A~~ The method according to claim 3, ~~wherein~~ further comprising:

controlling the created force ~~(F_a) is brought to be controlled~~ by soft servo.

6. (currently amended) Use of the method according to ~~any of claims 1-5~~ claim 1 when setting up an industrial robot spot welding cell.

7. (currently amended) A method of controlling an industrial robot ~~(1),~~ comprising a control unit ~~(1a)~~ and a manipulator ~~(1b)~~ including a tool ~~(2)~~ comprising a defined ~~TCP~~ tool center point, for determining a distance error ~~(w)~~ between an offline programmed position for a target ~~(p_cal)~~ on a surface ~~(19)~~ of a calibration plate ~~(20)~~ and a corresponding actual position ~~(p_c)~~ due to wear of the tool ~~(2)~~, with the tool orientation normal to the surface ~~(19)~~, the method comprising

~~characterized in~~

moving the robot from a first position ~~(p_s)~~ with the tool orientation normal to the surface ~~(19)~~ such that the tool ~~(2)~~ is brought in touch with the surface ~~(19)~~ of the calibration plate ~~(20)~~ creating an actual position ~~(p_c)~~,

reading an actual ~~TCP~~ tool center point position ~~is read~~ to define a coordinate system,

computing two reference distances ~~(d_1) and (d_2) are computed~~ from ~~the~~ differences between the ~~TCP~~ tool center point positions of ~~(p_e)~~ the actual position and ~~(p_s)~~ the first position, and

computing a ~~the~~ wear ~~(w) is computed~~ by the difference of ~~(d_1) and (d_2)~~ the two reference distances.

8. (currently amended) ~~A~~ The method according to claim 7, ~~wherein~~ further comprising:

applying a pose transformation ~~T_w is applied~~ to a tool data transformation ~~T_t~~ to correct for the wear ~~(w)~~.

9. (currently amended) ~~A~~ The method according to claim 8, ~~wherein~~ further comprising:

storing a tool data transformation ~~T_{new} is stored~~ in a memory of the control unit ~~(1a)~~ and using the tool data transformation ~~will be used~~ for the next welding operation.

10. (currently amended) ~~A~~ The method according to ~~any preceding claim, wherein~~ claim 7, further comprising:

moving the robot ~~is moved~~ in normal control servo mode.

11. (currently amended) ~~A~~ The method according to ~~any of claims 1-9, wherein~~ claim 7, further comprising:

moving the robot ~~is moved~~ in soft servo mode.

12. (currently amended) A method ~~of~~ in an industrial robot system comprising an industrial robot ~~(1)~~, including a control unit ~~(1a)~~ and a manipulator ~~(1b)~~ with a tool ~~(2)~~ comprising a defined ~~TCP~~ tool center point, and a level indicating means ~~(21)~~ for determining a reference distance, the method comprising: ~~(d_{cp})~~

~~characterised in that~~

bringing the level indicating means ~~(21) is brought~~ to comprise a movably attached plate ~~(23)~~,

during movement of the robot, bringing the tool tip ~~(18) is brought~~ to elevate the movable plate ~~(23)~~ into a programmed reference position ~~(p_{ed})~~ below a stop level ~~(I)~~,

bringing the tool tip ~~(18) is brought~~ to elevate the movable plate ~~(23)~~ from the reference position ~~(p_{ed})~~ into an upper stop position ~~(22)~~ creating an actual position ~~(p_a)~~,

reading an actual ~~TCP~~ tool center point position ~~is read~~, and

computing a reference distance ~~(d_{ref}) is computed~~ from the difference between the actual position ~~(p_a)~~ and the reference position ~~(p_{ed})~~.

13. (currently amended) ~~A~~ The method according to claim 12, ~~wherein~~ further comprising:

storing the reference difference ~~(d_{ref}) is stored~~ in a memory of the control unit ~~(1a)~~.

14. (currently amended) ~~A~~ The method according to claim 12, further comprising: ~~or 13,~~ ~~wherein~~

determining the wear of the tool ~~(w_e)~~ after a number of production cycles ~~is determined~~ through computing a difference ~~(d^*)~~ between the reference distance ~~(d_{ref})~~ and an actual distance ~~(d_a)~~.

15. (currently amended) ~~A~~ The method according to claim 14, ~~wherein~~ further comprising:

bringing the tool ~~(2) is brought~~ to comprise a first ~~(2a)~~ and a second gun arm ~~(2b)~~,

bringing the gun tool ~~(2) is brought~~ to be closed in its closed work position ~~(p_{work})~~,

using the reference distance ~~(d_{ref})~~, the current tool wear ~~(w_e)~~ and the actual distance ~~(d_a)~~ ~~are used~~ for computing the gun arm bending ~~(d_{bend})~~ in the gun tool in its closed work position ~~(p_{work})~~.

16. (currently amended) An industrial robot system, comprising:

an industrial robot; ~~(1) with~~

a robot tool; ~~(2) and~~

a level indicating means ~~(21), characterized in that the level indicating means (21)~~ comprising a movably attached plate ~~(23)~~ arranged to be moved by a tool tip ~~(18)~~ of the tool ~~(2)~~.

17. (currently amended) ~~A~~ The device according to claim 16, wherein the level indicating means ~~(21)~~ is arranged to comprise a plate movement limiting device ~~(24)~~ including a first fixed stop ~~(22)~~ defining an elevation stop level ~~(I)~~.

18. (currently amended) ~~A~~ The device according to claim 17, wherein the plate

movement limiting device ~~(24)~~ is arranged to comprise a second fixed stop ~~(25)~~ defining a lowering stop level ~~(II)~~.

19. (currently amended) ~~A~~ The device according to claim 16 ~~or 17~~, wherein the movable plate ~~(23)~~ is arranged with a spring suspension ~~(26)~~.

20. (currently amended) ~~A~~ The device according to ~~any of claim 16-19~~ claim 16, wherein the movable plate ~~(23)~~ is adapted to pivot about an axis ~~(H)~~.

21. (currently amended) A computer program product, comprising:

a computer readable medium; and

instructions recorded on the computer readable medium to influence a processor to carry ~~out the method according to any of claims 1-15~~ the steps of

bringing a tip of a tool to be moved from a first programmed position at a distance from a surface in a defined direction towards a work piece,

bringing the tip to collide with the surface at a collision point, and

computing an actual position from the distance between the collision and the first programmed position in the defined direction of movement.

22. (cancelled)

23. (currently amended) Use of a method according to ~~any of claims 1-15~~ claim 1, an industrial robot device ~~according to any of claims 16-20~~ or a computer program product

~~according to any of claims 21-22~~ for carrying out any process working in specific positions.

24. (currently amended) ~~Use~~ The use according to claim 23, wherein the process for working in specific positions is any of the following methods of joining: spot welding, riveting, or clinching.

25. (currently amended) ~~Use~~ The use according to claim 23 ~~or 24~~ in processes comprising laser ~~fibre~~ fiber.

26. (new) Use of a method in an industrial robot device according to claim 16 or a computer program product for carrying out any process working in specific positions.

27. (new) Use of a method, an industrial robot device or a computer program product according to claim 21 for carrying out any process working in specific positions.